

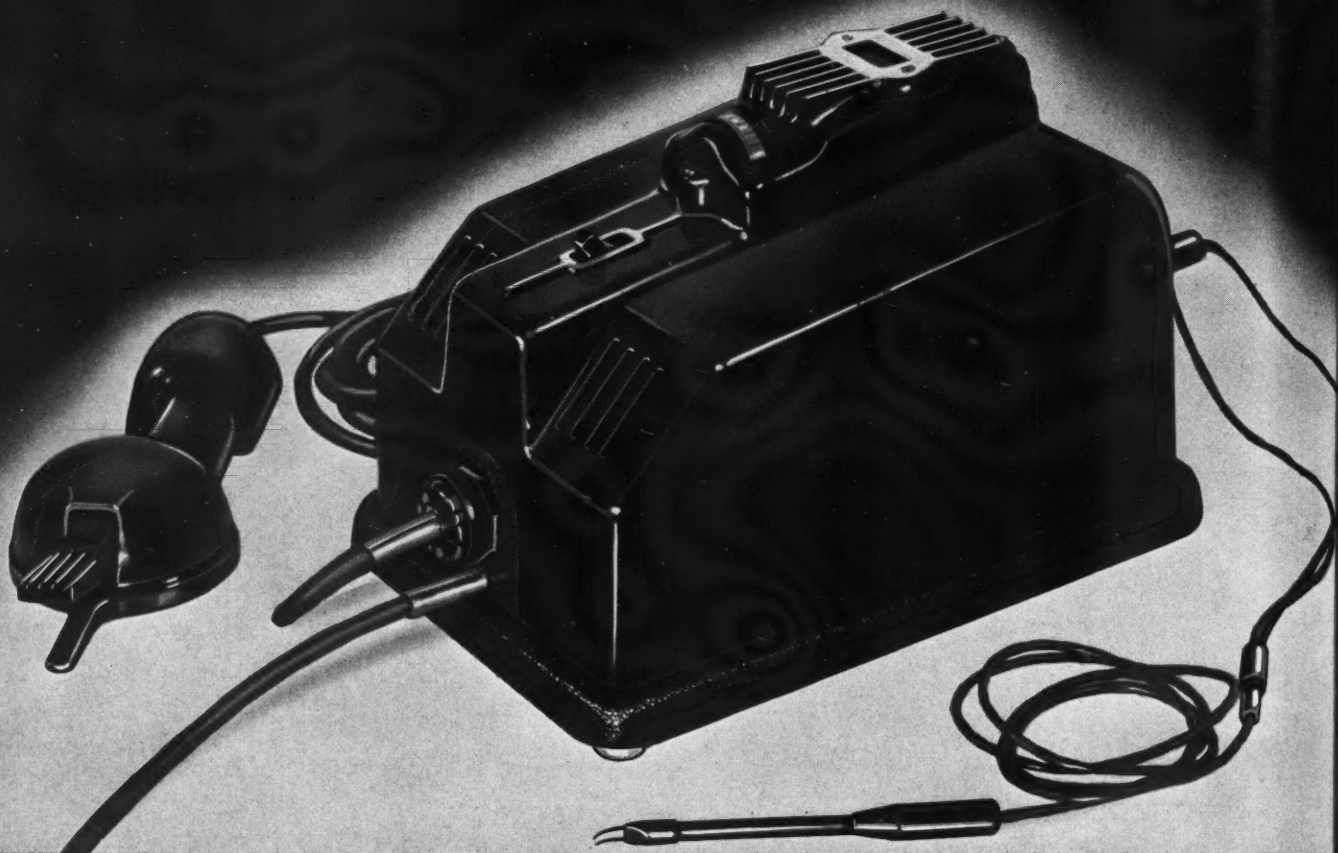
OCT 22 1937

THE DENTAL DIGEST

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OCTOBER, 1937



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A Simplified Technique for Finding Angles and Controlling Density in Dental Roentgenography

LEONARD FRANK, San Francisco

IT SEEMS TO BE conceded that "getting the angle" is just about the most difficult part of "taking" a dental roentgenogram. It certainly is important, for without correct angles the resulting film could be the cause of incorrect and embarrassing interpretations. There is no trick to getting correct angles. They are the result of attention to detail, care, and patience.

To produce good diagnostic films it is necessary to have all factors under complete control, so that if there is any discrepancy the fault can immediately be traced to its cause and quickly corrected. There are two necessary factors in a diagnostic film. Correct angulation and correct density. The two are of equal importance. The lack of either lessens the value of the film.

The solutions should be kept reasonably fresh, both the developer and the fixing solution (hyposulphite of soda or "hypo"). Keeping developing solutions too long unbalances the technique by lengthening the time of development. The older the solution, the longer the film has to be left in the developer. Old "hypo" causes stains on the film. It is false economy to use exhausted solutions.

Correct Density and How to Control It

To control correct density a thorough understanding of the six steps used in formulating a technique is necessary. There are two dark room steps and four operating room steps. Each step has a definite bearing on the result.

Dark Room Factors—The two dark room factors are (1) the temperature of the developing solution and (2) the length of time that the film is left in the solution.

1. Any temperature between 65 and 70 degrees can be used. It is best to use 65 degrees as the temperature. A floating thermometer should be kept

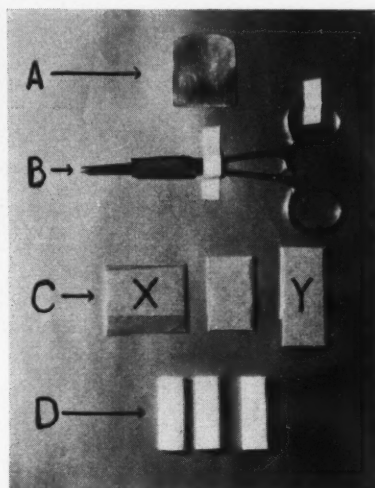


Fig. 1—A, German silver plate that is wrapped in film packages C to give rigidity to film; B, hemostat used to hold films in upper or lower molar region. A piece of rubber tubing has been forced over the jaws of the hemostat to give the patient a biting surface. C, Different sizes of film used. X and Y are the sizes that can be duplicated at local dealer. D, Cotton rolls, size number 3: $1\frac{1}{2}$ inches long.

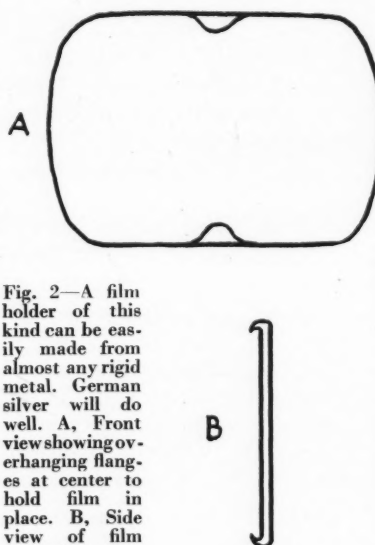


Fig. 2—A film holder of this kind can be easily made from almost any rigid metal. German silver will do well. A, Front view showing overhanging flanges at center to hold film in place. B, Side view of film holder.

in the developing tank so that the technician will know that the temperature of the developer is 65 degrees at all times.

2. How long should the film be left in the solution? Most film manufacturers advise five minutes at 65 degrees. It is advisable to use that length of time, although a technique can be adapted to a longer or shorter time.

The two factors in the dark room must be kept constant: the temperature of solutions, 65 degrees; and time of development, five minutes. It is important not to change these factors.

Operating Room Factors—There are four factors in the operating room technique. They are: (1) kilovolt peak (K.V.P.); (2) milliamperes; (3) distance, and (4) time of exposure. With the dark room technique constant a variation of any one of these factors will change the density of the film.

To have complete control of the density of the film the technician must select one of the four operating room factors as a variable. At this point the type of x-ray machine must be considered. Almost all dentists use some type of x-ray machine designed exclusively for dental use, and are, therefore, limited in their selection of a variable.

On these machines the K.V.P. and milliamperage is set so that neither can be used as a variable. Owing to the speed of the dental films in common use, it is necessary to use not more than 9 inches as the film-to-target distance. This leaves only time of exposure as the variable that can be used. Because of the limited flexibility, therefore, of the control in most types of x-ray machines made exclusively for dental purposes, the variable used to control the density of the film must be the time of exposure. The axiom, then, for density control is the following:

The dark room technique must be

constant, and with the kilovolt peak, milliamperes, and distance constant, the density is completely controlled by varying the time of exposure. Shorten or lengthen the time of exposure as the density of the film dictates.

For those who wish to experiment with a distance technique, Victor-Bolin Lightning films should be used with a 25 to 30 inch tube-to-film distance and the time of exposure as the control. A satisfactory roentgenogram can thus be obtained. Long distances cannot be used with the regular x-ray films. They have not the speed necessary for the distance technique.

Armamentarium

Fig. 1 shows the materials I use as aids to correct angulation. The films illustrated here are three of the five sizes used. They are cut from 8 by 10 Agfa Non-Screen films. Eastman also makes a suitable film. The film is cut into strips and then cut by dies into the several sizes. Although it is convenient to have several sizes of films to work with, it is probably not practical for the busy dentist to make and wrap his own films.

If the dentist decides to experiment with this type of film, he is cautioned to remember that it is fast. It is excellent for a 30 inch to 36 inch technique. The density control technique is used to determine the exposure time.



Fig. 3—Group 1: Central and lateral region. Patient in reclining position, thoroughly relaxed; eyes focused at ceiling.

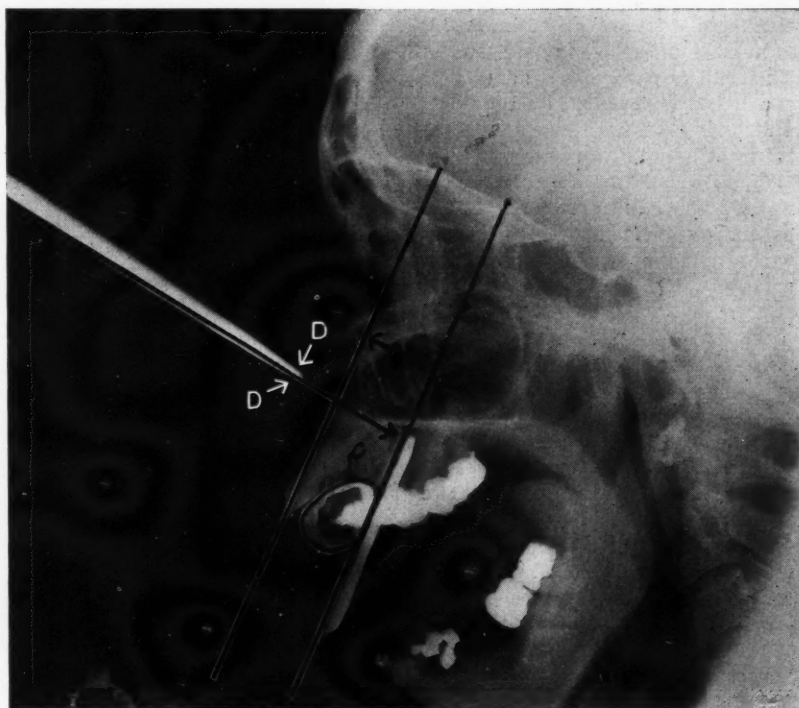


Fig. 4—Group 1: Central and lateral region. Roentgenogram taken of patient while posed as in Fig. 3 in order to show more fully the position of the film in relation to the teeth. A steel rod was used to show the path of the rays. A, Long axis of the film with German silver insert; B, long axis of the tooth; D, path of rays; that is, the central ray passing through line B; the long axis of the teeth and striking line A, the long axis of the film. C, Two cotton rolls wrapped in lead foil. The cotton rolls are placed on the lingual surface of the central and lateral, so that the film A can be brought parallel with the teeth through which D passes. Note how closely line A parallels line B, so that the rays, line D, can be projected at an almost perfect 45 degree angle. The lead foil was used so that the position of the cotton rolls would show. In practical application, foil is not used around the rolls.



Fig. 5—Group 1: Central and lateral region. Roentgenogram of central and lateral region taken under conditions shown in Fig. 4.

In Fig. 1 the films X and Y are the ones of most interest because these sizes can be duplicated closely and are carried by local dealers. Size X is the film commonly used by all dentists. Size Y is not so well known. It is number 0 film made by Eastman. This film is particularly adapted to the incisal regions in both the upper and lower jaws. In the cuspid regions, it will be found invaluable.

Rigidity of Films—Rigidity of the films is important and it should not be difficult to fashion a holder into which to slip a film (Fig. 2). It may make placing the film a little more difficult, but when it is realized that any bend of the film causes a distortion the result is worth the effort.

Angulation

Angulation has always been the bugbear of roentgenography, and it should not be. By using a definite standardized plan of procedure any dentist can vastly improve his technique. The only requisite is not to be too easily discouraged. The beginning may be difficult but the end-result will be well worth the effort.

Most of the literature so far published describes an upright position

for the patient as a requisite for correct angulation. With the patient in this position the angles for the maxilla are based on an imaginary line drawn from the ala of the nose to the tragus of the ear, this line being parallel to the floor. In the mandible the line is drawn from the corner of the mouth to the tragus of the ear. From these lines the writers have computed certain angles, in degrees, as the path of the central rays.

This method has always been confusing to the dentist. It is too complicated and although it will produce a roentgenogram, the result is often far from satisfactory. A more simplified technique is necessary. There is really only one way that an anatomically correct roentgenogram of a tooth can be made:

The long axis of the film must be parallel to the long axis of the tooth with the central ray projected at a direct right angle to the film.

Although we cannot get the ideal position at all times, it is possible to place the film so that the angle of the central ray is brought to a minimum.

Position of Patient—The position of

the patient deserves a great deal of thought, for on this factor hinges in a large measure the success of the angles. As stated before, most of the literature describes an upright position for the patient. This position has many drawbacks. It keeps the patient tense when he should be relaxed and makes it difficult to remain quiet.

A dentist is accustomed to looking downward into the mouth when he is operating, and any other position is unnatural to him. In the upright position the tube is often in the line of vision, forcing the operator into a half crouch to get the angle, which is uncomfortable and undignified. A reclining position is far more comfortable for the patient (Fig. 3, Group 1). It will be found simpler to judge the angle in this position, as both patient and tube are more easily visualized by the operator.

Further to simplify finding the angle, keep the tube in the same general position above the patient's head. Instead of rotating the tube around the patient's head, rotate the patient's head under the tube. This standardizes the position of the film



Fig. 6—Group 2: Cuspid region. Patient reclining; head slightly rotated; eyes focused at top of side wall.

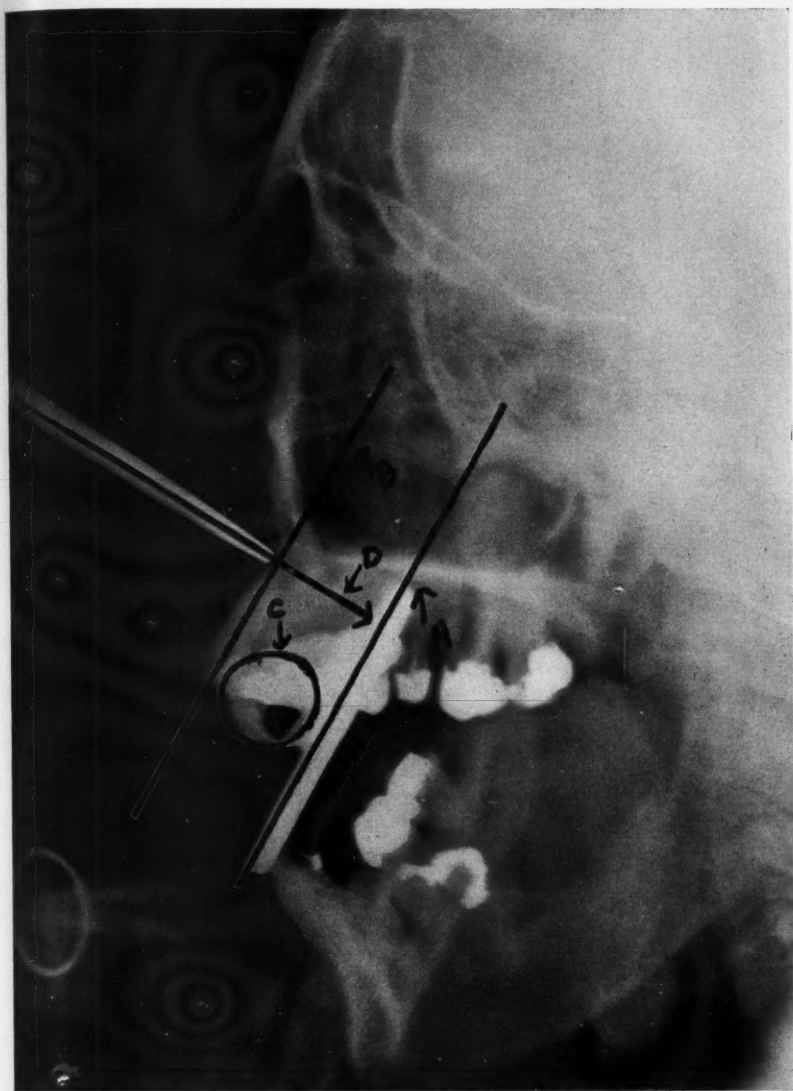


Fig. 7—Group 2: Cuspid region. Roentgenogram taken of patient as posed in Fig. 6. A, Long axis of film; B, long axis of cuspid; D, path of rays; C, cotton rolls on which film A is resting, bringing the film into parallel position.

in relation to the tube. There are only three necessary position changes for the head. They are the same for the right or left maxilla or mandible.

Group 1: Central and Lateral Region—In Fig. 3 the patient is seen in the chair comfortably relaxed in a reclining position, eyes focused at the ceiling, holding the film in position with the thumb. A roentgenogram taken of the patient while holding the film, shows the detail of what took place (Fig. 4).

This is not a selected or unusual case. The patient had an average arch such as is seen every day. The result

was obtained by using enough cotton rolls to hold the film away from the teeth in order to get a parallel position. Fig. 5 is the resulting picture.

Group 2: Cuspid Region—Because the cuspid is situated as it is in the corner of the mouth it is best to consider this tooth alone when setting the angle and to have the patient in the position shown in Fig. 6. A roentgenogram of this case shows the detail of the film, tooth, and rays. It will be observed that even in the difficult cuspid region, it was possible to bring the tooth and film into parallel position by using cotton rolls.

Group 3: Bicuspid and Molar Region

—For the bicuspid region either the regular size film or the Eastman number 0 can be used, preferably number 0. If the regular size is used the longest dimension of the film should parallel the long axis of the tooth. Use cotton rolls.

In the molar region the technique changes. For this part instead of using the thumb to hold the film a hemostat¹ is used (Fig. 1, B). Grasp the film with the hemostat along the border of its longest dimension. Place the upper border of the film on the median line of the palate and have the patient bite with the central incisors on the rubber tubing that has been placed half way up the hemostat. Keep the film parallel with the long axis of the teeth. The film will, nat-

¹Demonstrated by Donald W. McCormack, D.D.S. at the American Dental Association meeting in San Francisco, 1936.



Fig. 8—Group 2: Cuspid region. Roentgenogram of cuspid taken of patient under conditions shown in Fig. 7.



Fig. 9

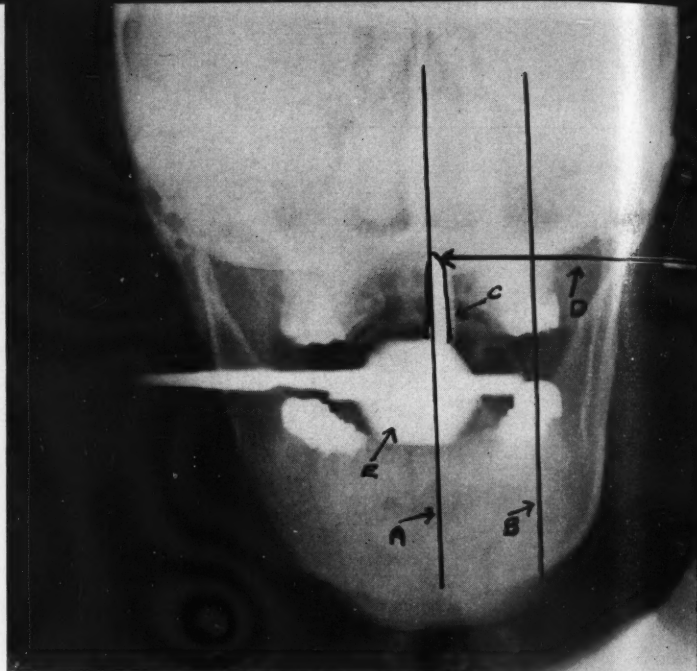


Fig. 10

Fig. 9—Group 3: Bicuspid and molar region. Patient reclining; head rotated with eyes focused at the side wall.

Fig. 10—Group 3: Bicuspid and molar region. Roentgenogram of patient as posed in Fig. 9. A, Long axis of film; B, long axis of teeth; D, path of rays; C, film being held in position by hemostat E. Note position of film C on median line of palate.



Fig. 11

Fig. 11—Group 3: Bicuspid and molar region. Roentgenogram of molar region taken under conditions outlined in Fig. 10.

Fig. 12—A, Ruler tied across mouth of cone; B, ruler laid across short axis of film. When making initial exposures of any region these two lines should always be parallel. This is called the film-cone relationship and is the guide for any angle changes when retaking roentgenograms.

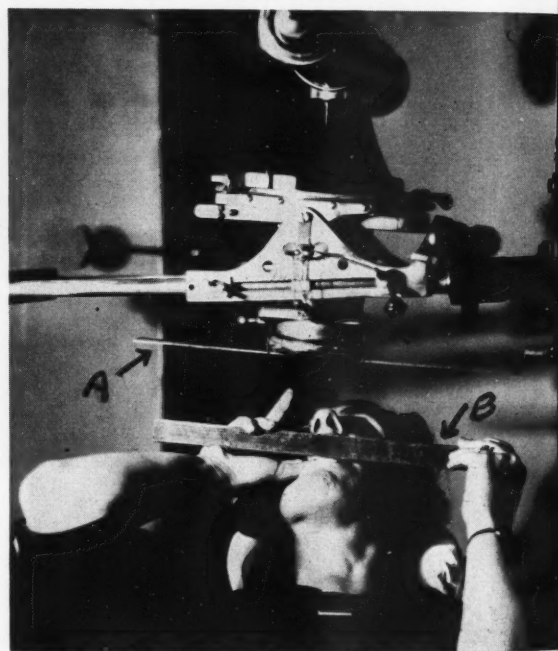


Fig. 12

usually, not be in apposition with the teeth. This need not concern the operator. The detail of this method is shown by lettered lines and arrows in Fig. 10.

Film-to-Cone Relationship

Throughout this article standardization of technique has been emphasized because with all factors known any fault can be quickly checked. In keeping with this, Fig. 12 is important. A ruler has been placed across the short axis of the film and another has been tied across the mouth of the cone. It will be observed that these rulers are in parallel position.

When making the initial exposures in any case, at all times this film-to-cone relationship should be had. When the films are developed, they should be examined for superimposition of crowns. If there is any superimposition, it is an easy matter to make the correction. The original cone-film relationship is a known factor; it was parallel. All that is then necessary is to change the known fac-

tor to a mesio-distal or a disto-mesial angle to correct the fault and bring out the contact points of the teeth.

When setting angles for the upper arch, it is better to stand to the front of the patient. When setting the angles for the lower arch it is better to stand behind the patient. It is easier to visualize the tooth, film and cone relationship in these positions.

450 Sutter Street

Immediate Denture Technique Insuring Preservation of Facial Dimensions

BERT L. HOOPER, D.D.S., Lincoln, Nebraska

THE PATIENT WHO is about to lose his natural teeth is properly concerned about the results. He is anxious about his appearance: Will he look as he did with his own teeth? Will his face appear too full? Will it "cave in"? Will the teeth be so short that he will appear toothless? Will they feel comfortable or uncomfortable? Will he be able to chew?

The patient's fear in regard to artificial dentures are well founded, because too often he has seen dentures that did distort the facial features. Usually the loss of a patient's last natural teeth is the result of some general systemic disease, of which his teeth are the direct or contributing cause. To add a mental depression to the physical depression often becomes a serious handicap to the patient's general recovery. For this reason, each dentist should be in a position to care for these unfortunate patients in a manner that will ease the path they must travel. Constructing dentures that preserve the normal dimensions of a patient's face is one way in which the dentist may lift the mental burden.

Immediate denture service offers advantages to both patient and dentist. There is only a short interruption in the patient's business and social activities. Normal facial features and facial dimensions are easier to preserve, and individual characteristics of each tooth and the alinement of teeth is far more easily and more accurately imitated. The patient more readily becomes accustomed to well constructed immediate dentures than to other types. The areas of operation are protected, insuring rapid healing and the formation of a firm ridge. Proper centric jaw relation is easily obtained.

If the natural teeth of the patient are in reasonably good alinement and there are few objectionable factors about them, the best way to give the

patient comfort and mental ease is to imitate as closely as possible the natural teeth with regard to position, size, and color. Considering the average mouth, with no extreme abnormalities, it is best to follow the alinement of the natural teeth, because the patient will be more comfortable, will look more natural, will masticate food better, and will enunciate more distinctly than when departures are made from the natural conditions.

It may be said that the closer the artificial dentures simulate the natural dentures, to that degree will the patient experience complete satisfaction; and to the degree that changes and alterations from the natural teeth are made, to that degree will the patient and dentist experience difficulty.

The technique, pictorially shown here, insures the proper or normal restoration of facial dimensions. The technique for the mandibular denture is the same as the technique shown for the maxillary denture in the accompanying illustrations.

Technical Comments

1. It is usually advisable to extract either the maxillary or mandibular teeth, and set that denture; then, wait until healing has taken place, so that the patient is reasonably comfortable before the opposing teeth are extracted. If, however, the patient's physical condition is satisfactory, both maxillary and mandibular teeth may be extracted, the ridges surgically prepared, and the dentures set at one appointment.

2. During the surgical operation, just before suturing the flaps, they (the flaps) are placed in apposition over the bone, and the denture is tried in position. If the denture fails to take a firm seating, the ridge should be inspected for prominences. These may be located by pressing first on one side of the denture, then, on

the other. The changing positions of pressure soon enables the operator to locate the point of fulcrum that needs a little more surgery. After the denture is seated firmly, the sutures are placed. An adhesive powder is sprinkled into the denture to hold it in position, and also to aid in keeping the wound free from the secretions of the mouth. The patient is instructed to wear the denture, without removal until his appointment the next day.

3. An immediate denture should be worn until sufficient tissue change has taken place so that the patient experiences some discomfort on account of its looseness, at which time new bases should be constructed by means of the duplicating method, thus restoring the lost stability and normal facial dimensions. The period that an immediate denture may be worn is, of course, variable.

The technique described and illustrated in this article places the artificial substitutes in the same relative position as that held by the natural teeth. The contour of the gums or ridges is preserved and the normal dimensions of the face are restored.

909 Sharp Building.

See illustrations

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four pages, please

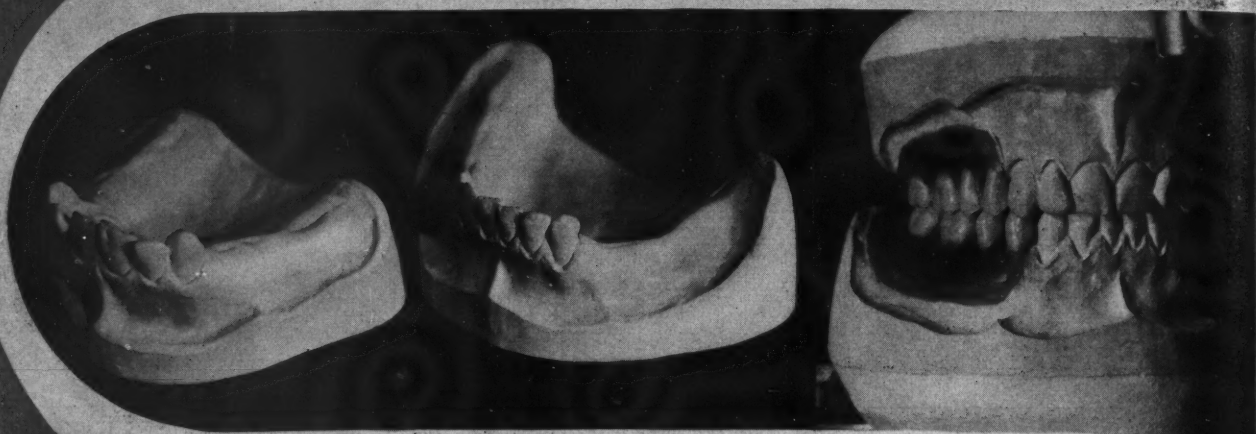


Fig. 1—After the posterior teeth have been extracted and the ridges have healed sufficiently, hydrocolloidal impressions are taken and casts are poured.

Fig. 2—Trial dentures, to replace the posterior teeth, are made and tried in the mouth to verify the various jaw relations.



Fig. 3—The gingival margin of the anterior teeth is outlined in pencil.



Fig. 4—The contact points are cut with a jeweler's saw.



Fig. 5—The sharp point of a thin-bladed knife cuts a line of fracture at the neck of the tooth.



Fig. 6—The tooth is broken off the cast.



Fig. 7—A large round bur cuts the socket in the cast, approximately 3 mm. deep. The pencil mark on the gingival margin is carefully preserved.

Fig. 8—A porcelain tooth is shaped to imitate the tooth removed, and the neck is cut to fit accurately against the labial surface of the socket.

Fig. 9—This cross section shows the adaptation of a porcelain tooth in the socket.

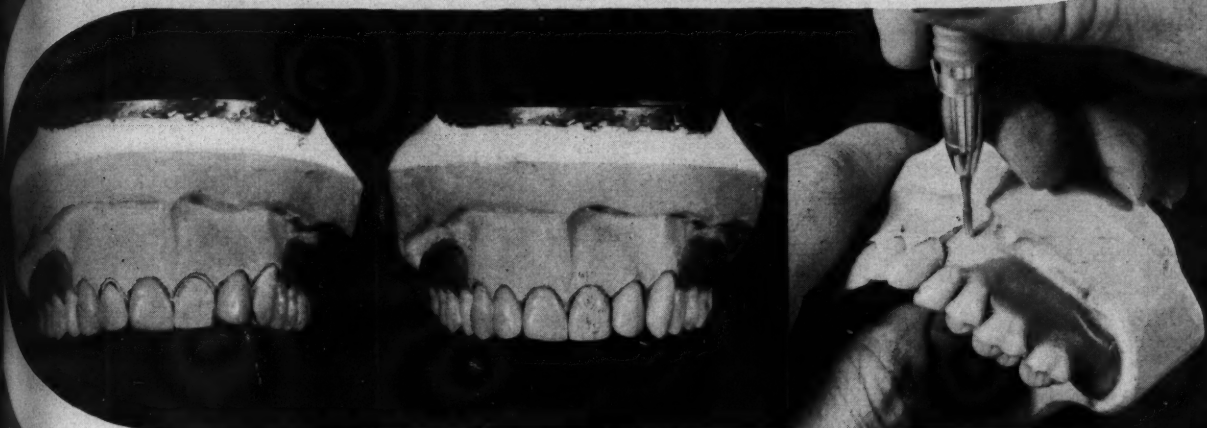


Fig. 10—Teeth are replaced alternately with porcelain substitutes in order to insure accurate reproduction of the natural alignment.

Fig. 11—Individual replacement of the remaining teeth of the cast completes the alignment of the porcelain teeth for the maxillary denture.

Fig. 12—A section of the labial ridge is cut with a large fissure bur.



Fig. 13—The section just cut away is replaced with wax.

Fig. 14—Each section of wax is carved to original contour and smoothed with flame.



Fig. 15—The knife blade is passed between the wax and the cast.



Fig. 16—The separation of wax and cast, as shown in Fig. 15, assists in keeping the bur from being loaded with wax, which would reduce its cutting power.



Fig. 17—The bur starts slightly short of the point where the muscles turn away from the ridge and the end passes toward the contact point of the teeth.

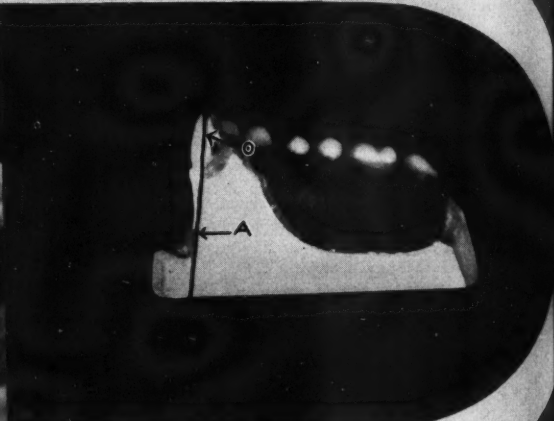
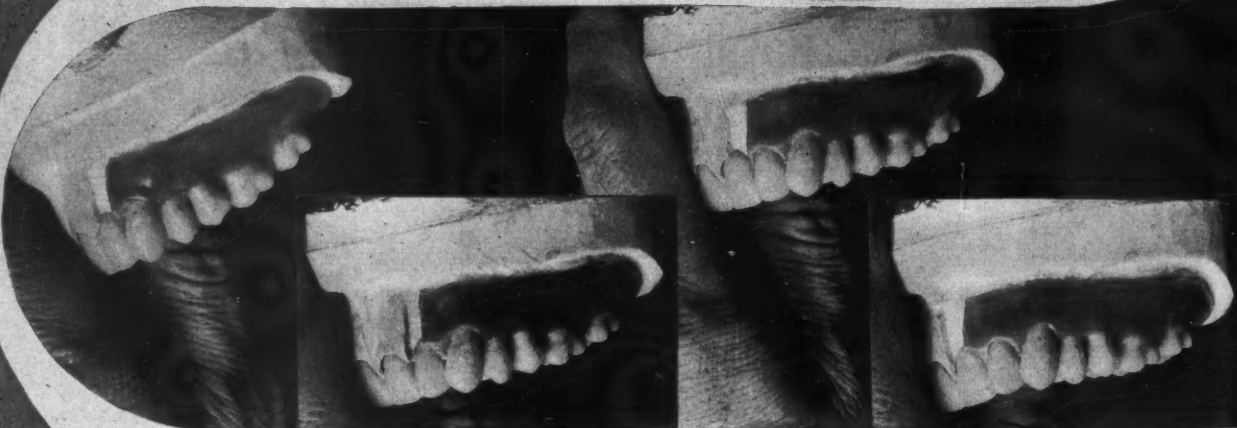


Fig. 18—A cross section gives a better idea of the amount of material to cut away. "A" is the starting point, slightly short of where the muscles turn away. "O" indicates the contact point toward which the end of the bur cuts.



Figs. 19, 20, 21, and 22—Successive cuts are shown, and the waxed contour up to the median line is seen.



Fig. 23—The completed labial contour in wax on the left side.

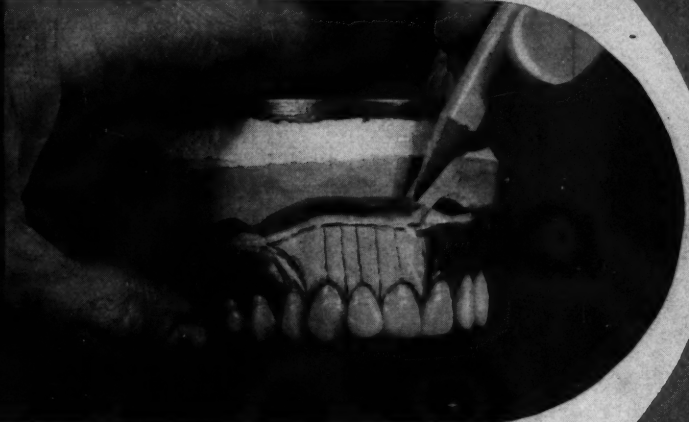


Fig. 24—To insure exact reproduction of labial contour, only a small area should be cut away at a time, and that should be replaced immediately with wax before proceeding with further cutting. The size of the area included is indicated by pencil marks.



Fig. 25—Beginning removal of the septums from the ridge, after the case has been flaked and separated.



Fig. 26—Septums have been cut away on the left side, and the ridge has been trimmed to join the labial surface.



Fig. 27—A cross section of the case shows the general contour of the trimmed ridge, which has been determined by the amount of necessary surgery anticipated.



Fig. 28—The finished cast, ready to be tin-foiled. The base material which fills the remnants of the sockets should be removed in the finished denture.

The Editor's Page

MORE THAN any other American newspaper the *New York Times* lives up to its own slogan, "All the News That's Fit to Print." Sometimes, however, in its zeal for complete coverage, even the august *New York Times* slips a cog. In a column-long story under the date line, September 12, is an account of an ex-soldier of the Boer War who "finds" a toothache "cure." Mr. Sabin who has resurrected the worm theory of tooth decay is a retired dry goods merchant without any dental training, so far as we know. According to his theory, parasites come leaping out of aching teeth; "they are one eighth of an inch long; have the thickness of a pin; and they are white with a brownish head."

Mr. Sabin was not satisfied to be the mere discoverer of the parasite that is purported to cause tooth decay but also, because he is apparently a thorough-going chap, he wanted to do something about a cure. In South Africa he found that the cannibal plum was particularly efficacious as a cure for aching teeth. In fact, Mr. Sabin has imported some plum seeds which he is now growing in his own back yard, intended for the relief of pulpitis. So we are back where we started from—in the Dark Ages: when worms cause tooth decay and the laying on of herbs is the treatment. All we need are the painted faces and the tom-toms, and the picture will be complete.

The *Times* story tells us that one of the teachers at Columbia University School of Dental and Oral Surgery, although frankly skeptical, expects to give Mr. Sabin a chance to demonstrate his leaping worms. The head of the surgical staff of a New Jersey hospital, Doctor George B. Pitkin, according to the *Times*, comments in this fashion: "It is conceivable that these so-called worms pass into the intestine when washed out by saliva, causing the rheumatics blamed on decayed teeth, but so far it sounds like hocus-pocus." The only part of Doctor Pitkin's comment that bears consideration is the "hocus-pocus."

Let us compare this fantastic news story with the calm, dispassionate report of the Five-Year Research Program on the Study of Dental Caries conducted at Northwestern University Dental School. On the occasion of the fiftieth anniversary of that school, reports

of the group study were made. Pathologists, physiologists, histologists, chemists, nutritionists, and clinical dentists participated in the study. As a result of an immense amount of work, the following general facts regarding tooth decay were stated:

Dental decay is not due to a fundamental weakness in the tooth but to environmental conditions; that is, it is due to the chemistry of the saliva and to the mouth micro-organisms. The saliva is not a body fluid that shows any significant qualities on chemical analysis. Qualitatively and quantitatively the saliva of the person immune to caries and the one susceptible shows no chemical differences. In the presence of dissolved enamel particles the saliva of persons immune to tooth decay dissolves little calcium, whereas the saliva of susceptible persons dissolves large amounts of calcium. This behavior of saliva has established the basis of a salivary test to determine the index of susceptibility. Among 750 persons on whom this salivary test had been made, 84 per cent showed a verification on clinical examination.

The Northwestern University investigators make it plain that the quality of the enamel cannot be changed by diet but that the effect of diet is on the chemistry of the saliva: on the environment of the tooth. The duration of local sugar retention, moreover, apparently has some effect on the degree of susceptibility by changing both the chemistry of the saliva and by establishing a pabulum for aciduric organisms.

So far as bacteria are concerned, it would appear that the *Bacillus acidophilus* and the yeasts are found more frequently in the mouths of susceptible persons than in those who are immune. Curiously enough, streptococci appear more frequently in immune mouths. This may have no relationship to dental caries but may be related to other types of infection.

The flamboyant story in the *New York Times* and the scientific presentation by the Northwestern University group once again point the difference between mumbo-jumbo and true science. The scientist works slowly, carefully, with suitable controls; his utterances are guarded; his conclusions can be verified by other investigators.

Newer Methods in Preparing Vital Teeth for Porcelain Jacket Crowns

H. SPALDING BOTH, D.D.S., New York

THERE IS AT PRESENT no known altogether standardized operative procedure in dental ceramics. Each case requires individual study and treatment.

Visualization of the fact that a jacket crown is intended to replace the enamel capsule of a vital tooth should do much to improve the technique of tooth preparation. The importance of minimizing trauma during operative procedure cannot be over-emphasized. The technique herein described was designed with this necessity primarily in mind.

There are two different and distinct types of tooth preparation: one, customarily known as the shoulder preparation, and the other, as the shoulderless preparation. Each has its distinct place, and good judgment will dictate which of these is the proper procedure to be followed.

Technique for Shoulder Preparation

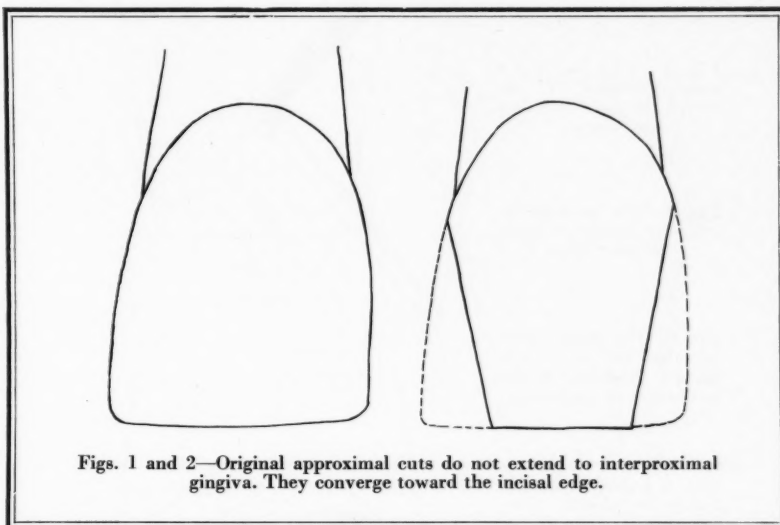
1. The proximal sides are cut with a separating disc until the mesial and distal surfaces converge slightly toward the incisal edge (Figs. 1 and 2).

2. A number 11 S. S. White mounted stone is then used to remove the enamel from the labial and lingual surfaces of the crown (Fig. 3).

During the foregoing operations, the tooth is kept at body temperature by liberal spraying of warm water on the tooth. The observant operator knows when the dentine has been reached, by sight, touch, and sound. There now remains a crest of thin enamel around the neck of the tooth which cannot be reached with a stone as large as the number 11 S. S. White without injury to the soft tissues.

3. At this stage of the operation a copper band is carefully fitted and festooned around the tooth and then is laid aside.

4. A new, sharp number 23 S. S.



Figs. 1 and 2—Original approximal cuts do not extend to interproximal gingiva. They converge toward the incisal edge.

White mounted stone is now inserted into the handpiece (Fig. 4). With this stone, the cervical enamel is removed and, at the same time, a shoulder is cut into the tooth. The stone must be sharp and new, and its base must at all times be kept parallel to the gingival margin. This stone, if properly applied, will cut toward the apex with its base, and toward the pulp with its side. The angulation of the stone during its application is the important phase in this step (Fig. 5). At no time must the stone injure the delicate mucosa or periodontal membrane. This stone will cut a distinct and fine shoulder across the entire labial and lingual surfaces of the tooth. On the lingual surface the shoulder is usually not placed below the gum margin unless the tooth is particularly short.

5. The shoulder is then more sharply defined in the interproximal areas with a separating wheel, the operator being careful to preserve the gingival crest and not to cut too far below the gum margin.

6. The cone-shaped mounted stone number 23, used to form the shoulder, usually creates a slight depression just below the shoulder which, if allowed to remain might interfere with producing an accurate impression. The cervico-labial portion, therefore, is polished with small sandpaper discs.

7. The shoulder is now finished and carried further below the gum margin by hand instrumentation (Fig. 6). For this purpose, I use Columbia University chisels numbers 8 and 9, which were designed by Doctor Hartman. These chisels, owing to the inclination of their cutting edge will produce a shoulder which will either flare outward toward the periphery, or inward toward the tooth. I prefer the latter, which I call a depressed shoulder (Fig. 7). To create a depressed shoulder the chisels are held so that their highest point is nearest to the tooth stump. They are placed carefully along the shoulder and applied until the desired distance below the gum margin is obtained. If a flaring shoul-

Fig. 3—The mounted stone (number 11) removes the labial and lingual enamel.

Fig. 4—The shoulder is cut with mounted stone number 23.

Fig. 5—The sharp stone (number 23) cuts a well defined shoulder. Notice inclination of instrument.

Figs. 6 and 7—Columbia University chisels, numbers 8 and 9, finish the shoulder. A depressed shoulder is formed by holding the highest point of cutting edge of chisel on shoulder nearest tooth crown.



Fig. 3

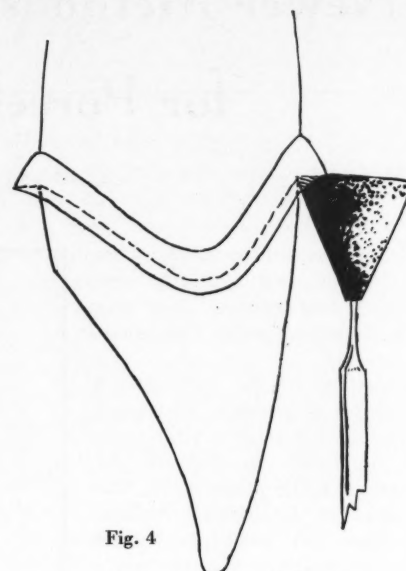


Fig. 4

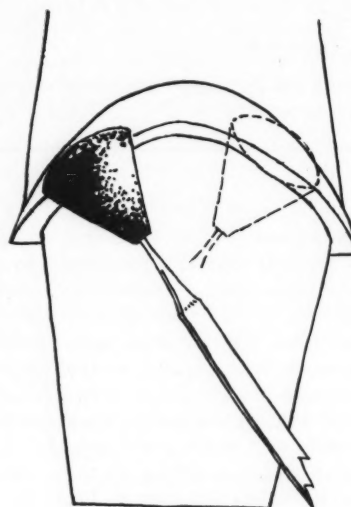


Fig. 5

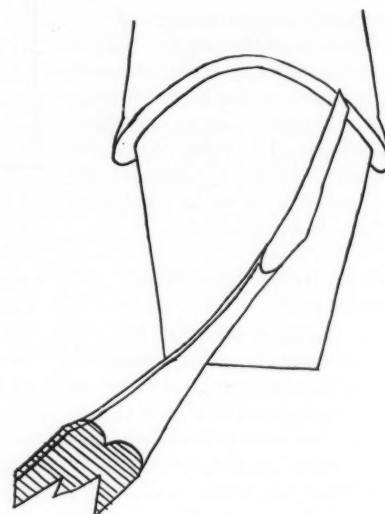


Fig. 6

der is desired, the cutting edge of the chisels is reversed, the highest point of the cutting edge being held outward or away from the tooth stump. On the lingual surface this operation is simplified, because the shoulder does not extend beyond the gingival margin. The shoulder of a jacket crown should be prepared with chisels for the same reason that the gingival margin of an inlay is prepared with chisels.

8. It is well to observe the field of

operation at this time with magnifying glasses.

9. It is wise to coat the prepared tooth with a good cavity lining before taking the copper band impression. For this purpose, I use diluted phenol, then warm alcohol, followed by rosin and chloroform and, finally, copelite. I take these precautions in order to seal the exposed dentinal tubules, thus again guarding against trauma.

It will be noted that by following

this method no steel revolving instruments, such as burs, need be used and the tooth can constantly be kept at body temperature. As much dentine as possible is left on the tooth, in order to preserve pulp vitality. Infection of the pulp through the dentinal tubules is prevented by the varnishes, even though tremendous pressure may be exerted on the dentine in obtaining the copper band impression.

We cannot be too dogmatic in attempts to standardize dental pro-

Fig. 8—The original ap-
proximal slices extend to
the soft tissues but not un-
der them.

Fig. 9—Castings supply the
shoulder in a shoulderless
preparation.

Fig. 10—Casting and jacket
crown assembled on a shoul-
derless preparation.

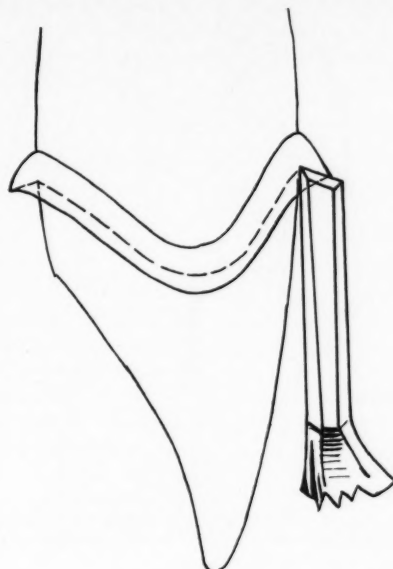


Fig. 7

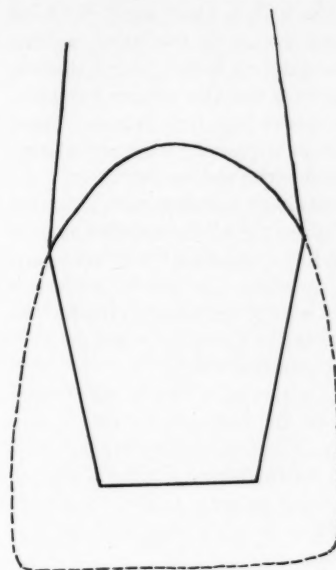


Fig. 8

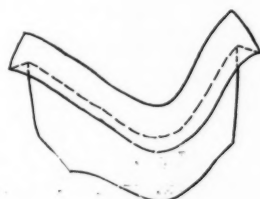
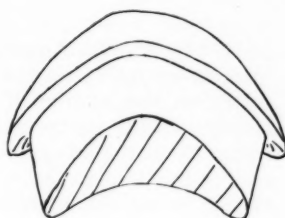


Fig. 9

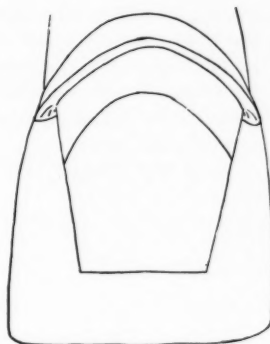


Fig. 10

cedure. This is especially true in vital jacket crown preparation. Therefore, when dealing with a tooth which is so narrow in diameter at its neck that its vitality may be endangered by the cutting of a shoulder, I certainly do not cut a shoulder. In these cases I believe the shoulderless preparation is the procedure of choice. The shoulderless preparation is indicated for mandibular incisors, many maxillary lateral incisors, first maxillary bi-

cusps with bifurcated roots, and many molars, as well as teeth from which the gingival tissue has receded beyond the enamel matrix. Trauma is greatly reduced by elimination of the shoulder preparation. This is not however, the simpler or easier of the two methods.

Technique for Shoulderless Preparation

I supply a shoulder by a casting,

thus creating a shoulder crown upon a shoulderless preparation (Fig. 8). The technique is as follows:

1. The tooth is first carefully prepared. By this I do not mean that a cone is formed, but a preparation is made which resembles in outline the original tooth: with its incisal edge, its lingual and labial surfaces following the original shape of the tooth, whether the tooth is prepared with or without a shoulder.

2. The fitted copper band is then marked with a clear scratch on its gingival collar to the exact outline of the gingival tissue, which thereby shows how far the copper band extends under the free margin. These markings are carefully preserved during laboratory procedure.

3. Although I always take a plaster impression for all jacket crowns, it is absolutely indispensable to take such an impression for the shoulderless jacket crown, because it enables the technician to know the exact position of the gingival tissue.

4. It is also advisable to make some kind of an accurate fusible metal coping, which is placed on the prepared tooth before taking a plaster impression, in order to seat the amalgam die more accurately into the impression.

5. The amalgam die is accurately seated in the plaster model.

6. A casting wax collar is constructed around the die.

7. In this wax collar a shoulder is carved just below the gingiva, the wax being extended incisally in a thin layer for a sufficient distance to form an accurate and definite seat for the resultant casting (Figs. 9 and 10).

8. This wax may be cast in gold or in platinum. If cast in gold, most of the labial and lingual surfaces of

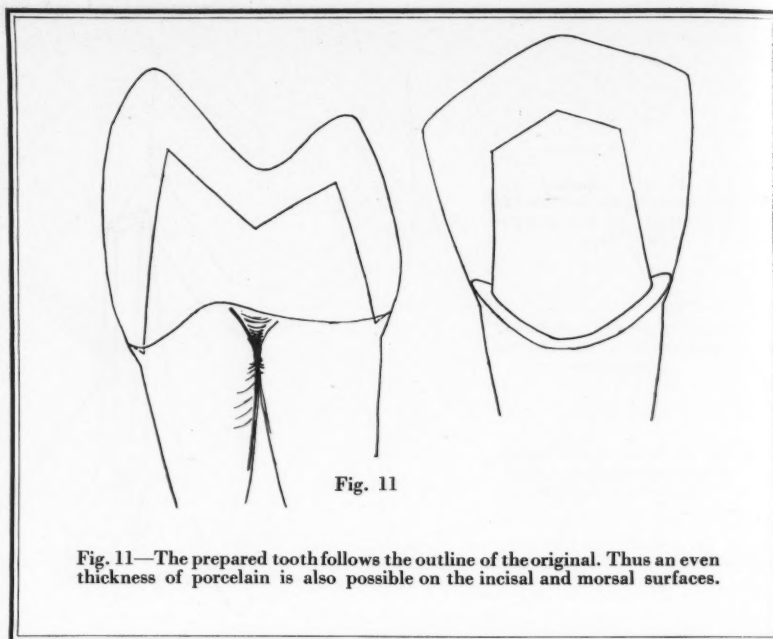


Fig. 11—The prepared tooth follows the outline of the original. Thus an even thickness of porcelain is also possible on the incisal and molar surfaces.

the prepared tooth may be left uncovered.

9. After the wax pattern with its carved shoulder has been cast and has been replaced upon the shoulderless amalgam die, the jacket crown is constructed, the shoulder now supplied by the metal casting being employed (Fig. 11).

10. If the casting is of platinum,

no additional matrix need be made, because the jacket may be baked directly on the casting. A platinum matrix is made for the gold casting. Although the gold casting necessitates the making of a platinum matrix, it has the advantage of being smaller, in that it need not cover the entire preparation on the tooth.

576 Fifth Avenue.

Postoperative Complications

WELDEN E. BELL, D.D.S., Dallas, Texas

I. POSTOPERATIVE COMPLICATIONS NOT DUE TO INFECTION

A. Acute Serous Inflammation:

Symptoms: Swelling (which is simple edema);
no pain or discoloration (unless subsequent infection occurs).

Etiology: A relatively slight irritating agent
{ anesthetic solution;
manipulation of the tissues;
ordinary surgical trauma.

Treatment: This condition may be corrected speedily by the use of intermittent hot magnesium sulphate compresses.

B. Obstructed Drainage and Hematoma:

Symptoms: Localized discolored swellings;
some pain (but not so great as from an infective condition of equal size).

Etiology: Obstruction to the free drainage of serum extravasation caused largely by failure to eliminate spaces that favor the collection and retention of serum and then bind down soft tissue over these retention areas.

Hematoma is due to hemorrhage into a retention space or into tissues.

Treatment: When extensive, these areas may require drainage.

External intermittent hot applications speed the process.

C. Adjacent Injury; May Include Injured

{ Buccal or Lingual Plate;
Septum;
Adjacent Soft Tissue;
Proximal Teeth;
Inferior Dental Canal;
Mental Foramen;
Maxillary Sinus.

Etiology and Treatment: Careful observation will usually reveal the injury, its cause, and the best course of treatment.

II. CONDITIONS PRIMARILY DUE TO INFECTION

A. Chronic Infection (or Residual Infection):

Symptoms: Persistent low-grade pain;
delayed healing;
formation of exuberant granulation tissue.

Etiology: Failure to remove completely from the operative area, chronic inflammatory tissue

{ pyorrheal granulations;
periapical chronic abscesses;
granulomas;
cysts.

May be due to a loose spicule of bone, root, or other foreign object.

A roentgenogram is valuable in determining etiology.

Treatment: The condition is corrected by removal of the excessive granulation, the offending inflammatory tissue or bone spicule.

Normal granulation should be permitted to follow removal.

In persistent causes, cauterization is helpful.

B. Acute Infection:

1. Socket Area (So-Called Dry Sockets):

(a) Alveolitis: An inflammatory process due to infection, involving part or all the contents of the alveolus; that is, the remaining periodontal membrane and the intervening blood clot or granulation tissue, but not the cortical plate of bone.

Symptoms: More or less softening and disintegration of the blood clot;
somewhat characteristic odor;
more or less constant pain, but usually not of the referred or neuralgic type;

almost no pus;
patient complains of constant soreness, but does not suffer.

Treatment: Alveolitis is treated by thorough irrigation with saline or potassium permanganate solution to remove as much as possible of the softened blood clot. An antiseptic is used: any nonirritating germicidal solution.

An analgesic dressing is placed in the socket to eliminate pain. This is done by incorporating a small quantity of zinc oxide eugenol surgical cement into an inch length of gauze, one-fourth inch wide. This gauze is dressed loosely into the socket.

Treating and redressing is done every 48 hours until a fresh layer of granulation tissue is seen to cover the walls of the socket, at which time all treatment may be dispensed with except irrigation. About 7 days are usually required.

(b) Alveolar Osteitis: An alveolitis in addition

to an invasion of the cortical plate of alveolar bone, causing an infection of the dense cortical osseous tissue.

Symptoms: The alveolus is devoid of healthy tissue;

the bony walls are exposed;
as infection progresses, a small amount of pus is present;
pain is severe (most painful of all postoperative conditions; may be the throbbing of neuralgic type, often referred to one or several teeth on the affected side.

Treatment: Thorough irrigation to remove detritus followed by antiseptics.

A piece of iodoform gauze saturated with 50 per cent guaiacol in olive oil solution is placed in the alveolus to desensitize the denuded bone. This solution is left in place from 15 to 20 minutes, at which time the pain usually disappears.

Remove the gauze and dress with surgical cement and gauze as outlined. Repeat treatment and dressing every 48 hours until a layer of healthy granulation tissue is seen to line the socket. Usually about 14 days are required.

(c) **Alveolar Osteomyelitis:** Type of circumscribed osteomyelitis involving not only the cortical plate but also the medullary spaces of the bone in the alveolar area.

This is not to be confused with acute diffuse osteomyelitis.

Symptoms: Prolonged presence of pain, constant although not severe, and is usually not neuralgic in character; fairly copious discharge of pus; granulation tissue may be seen growing in one part of the socket while disintegration is going on in another.

Treatment: Thorough irrigation; removal of sequestrums if any are present; adequate drainage.

Application of external heat is helpful.

It is not uncommon for the process of eradicating this infection to last a month.

2. **Bone Involvement:** If acute infection spreads from the operative area through the bony structure of the jaw, an acute diffuse osteomyelitis exists.

Treatment: Evacuation and drainage; irrigation; removal of sequestrums.

3. **Soft Tissue Involvement:**

(a) **Soft Tissue Abscess (a Circumscribed Area of Acute Purulent Inflammation):**

Symptoms: Marked swelling;
throbbing pain:

early pus formation with pointing of the process;

regional lymphadenitis and systemic signs of infection are usually seen.

Treatment: Control should be maintained over the pointing process by the judicious use of heat.

Early localization and incision intra-orally with evacuation of the pus are desirable.

Adequate drainage should be maintained.

(b) **Cellulitis (A Diffuse Area of Acute Purulent Inflammation):**

Symptoms: Marked pain and swelling;
pus formation and pointing process develop later;
lymphadenopathy is more pronounced and more widely spread; systemic signs of infection are more severe.

Treatment:

First Phase (Before Pus Formation Begins):

Apply ice bag to the inflamed area and also to the inflamed regional lymph nodes.

Prescribe saline laxative if needed, and rest in bed.

Force fluids.

Give analgesics and stimulants as required.

The condition may often be aborted in this stage by proper treatment.

Second Phase (After Pus Formation Begins, But Before Actual Localization):

Apply hot magnesium sulphate compresses to the inflamed area, but continue the ice bag over the regional lymph nodes as long as they are inflamed; otherwise treatment remains unchanged.

Third Phase (After Localization of the Pus):

Incision and adequate drainage are indicated.

Hot compresses are continued; the ice bag is no longer helpful.

In all other respects, the treatment remains unchanged.

4. **Systemic Involvement:**

(a) **Toxemia:**

Etiology: Presence of toxins in the blood stream, the organisms remaining localized to the area of infection.

Symptoms: Patient becomes toxic and depressed; temperature is increased; pulse weak and increased in rate; blood pressure drops; as the condition develops, the patient

may lapse into toxic shock, and death may ensue.

(b) Septicemia:

Etiology: Presence of toxins and also the actual organisms (which multiply) in the blood.

Symptoms: High fever, often ushered in by a rigor or vomiting; patient is seriously ill with rapid, weak or irregular pulse; lowered blood pressure; hot dry skin with occasional erythematous areas; and delirium.

(c) Pyemia:

Etiology: Organisms in the circulation lodge and form septic thrombi. Portions of these thrombi may become detached, forming septic emboli, lodging else-

where to form secondary multiple abscesses.

Symptoms: Usual series of rigors;

"hectic" temperature;

appearance of secondary nodular abscesses superimposed on toxemia.

Treatment: Systemic involvement, regardless of type, calls for cooperation with a physician.

In general, localization and adequate drainage of the primary focus, rest in bed, and catharsis, if needed, are indicated. Force fluids; prevent acidosis; give stimulants as required. Hydroclysis, and in some cases, transfusion and intravenous medication are sometimes necessary.

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(Please use coupon on page 508)

From the Literature

Roentgenograms of the Edentulous Jaw in the Presence of Residual Infection

(A Digest)

[B. H. Humble, L.D.S., R.F.P.S., Glas.: The Radiographic Appearance of the Edentulous Jaw with Special Reference to Residual Infection, A pamphlet, London, The Dental Record. (Prize paper read before the Glasgow Odontological Society.)]

The edentulous jaw, it should be remembered, results from a pathologic condition. No other bones undergo greater changes than the maxilla and mandible. The transverse and antero-posterior diameters of the maxilla are greater at birth than the vertical. At maturity the vertical dimensions are greater than the transverse or antero-posterior because the sinus has grown in size and the eruption of the teeth leads to downward development of the alveolar process. In old age the vertical dimensions become smaller. This condition is more marked if the teeth are lost and the alveolar process is absorbed.

The mandible at birth is a shell containing the unerupted teeth. The inferior dental canal runs along near the lower border of the bone. Eruption of the teeth leads to development of the alveolar process, and growth of the bone below the inferior dental canal. At maturity, the portions of the bone below and above the mental foramen are about the same size. In old age, if the teeth are lost the bone becomes much smaller; the alveolar portion is absorbed but the mental portion is unchanged, so that the greater part of the bone is below the inferior dental canal.

Similarly the cancellous bone changes from the large cancellous spaces and slight osseous framework of youth to the denser bone of old age as a result of the continued deposit of calcium salts and an increasing amount of compact bone.

Correlation of Anatomic Appearance with Roentgenograms

At maturity the normal cancellous bone is bordered by a thin layer of compact bone and this has the ap-



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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, OF AUGUST 24, 1912. Of The Dental Digest, published monthly at Pittsburgh, Pa., for October 1, 1937.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared M. B. Massol, who, having been duly sworn according to law, deposes and says that he is the Publisher of The Dental Digest, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, printed on the reverse side of this form, to wit:

1. That the names and addresses of the publisher, editor, publication manager, and business managers are: Editor, E. J. Ryan, B.S., D.D.S., 708 Church Street, Evanston, Ill.; Publisher, M. B. Massol, 1005 Liberty Ave., Pittsburgh, Pa.; Publication Manager, R. C. Ketterer, 1005 Liberty Ave., Pittsburgh, Pa.

2. That the owners are: Dental Digest, Inc., 1005 Liberty Ave., Pittsburgh, Pa.; Oral Hygiene, Inc., 1005 Liberty Ave., Pittsburgh, Pa.; M. B. Massol, 1005 Liberty Ave., Pittsburgh, Pa.; Louise A. Smith, Schenley Hotel, Pittsburgh, Pa.; Lynn

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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stocks, bonds, or other securities than as so stated by him.

(Signed) M. B. MASSOL, Publisher.

Sworn to and subscribed before me this 30th day of September, 1937.

(Seal) E. G. Burdord, Notary Public. (My commission expires May 11, 1940.)

pearance of a thin white line, which follows the contours of the roots of the teeth and so lines the sockets. Normally there is no break in its continuity, so that it is an important diagnostic feature. The cancellous bone appears as a wire netting arrangement, the wires appearing white and the spaces between them dark. The white shadows represent the calcium deposits and the black shadows the inter-trabecular spaces. These cancellous spaces are larger in the lower than in the upper jaw. In the mandible the cancellous spaces are larger and more distinct in the molar and bicuspid regions, but become smaller in the incisor region.

Infection Alters Cancellous Bone

In the presence of infection the cancellous bone is variously altered. These changes are of two main types: rarefying and sclerosing osteitis.

Rarefying Osteitis—This condition is due to bacterial infection either by way of the pulp canal or the gingival margin. It leads to removal of lime salts; thus it affects the osseous network. In apical infection the condition may be localized to one tooth with several adjoining trabeculae destroyed. The roentgenograms will show a radiolucent area around the apex of the tooth, definitely demarcated from the healthy bone. When the area is small, the condition is what is known as a chronic abscess; when it is very large, it is known as a dental cyst. The condition may spread to involve the apexes of several teeth.

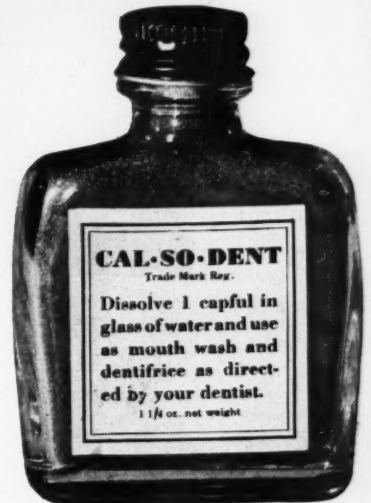
Sclerosing Osteitis—This is a thickening of the osseous borders of the cancellous spaces and is often seen bordering a rarefied area. It is generally regarded as a defensive reaction tending to limit the spread of infection. When the source of infection, the tooth, is removed, new bone forms and there is sometimes an excessive deposit of lime salts. In the roentgenogram the regenerated area appears as a dense white area and sometimes may simulate a fragment of a broken root. When the resolution (subsistence of inflammation) is not complete the roentgenographic appearance is that of a ring of dense bone enclosing dark spots (considered by some as colonies of living bacteria).

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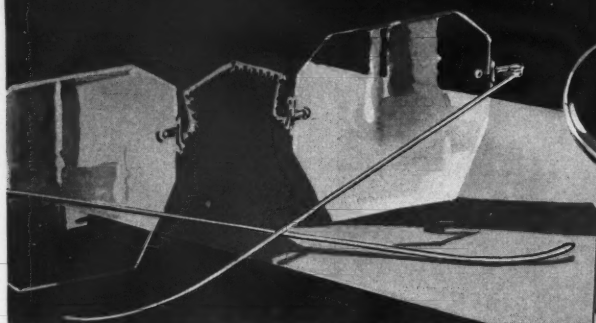
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Dollar-store eye-glasses may seem to duplicate the product of a skilled optometrist, but actual use always proves they don't.

With Mouth Mirrors it's much the same. Different grades may look alike but, for EYE-COMFORT and accuracy, experienced Dentists have learned to standardize on mirrors marked KERR.

There are sound reasons for this preference in addition to their brilliant, clear lenses. For Kerr Mouth Mirrors are more substantially built. Backs are stronger. Fastening is more secure. Mounting hides no chipped edges to cause refracted cross-lights.

Result is long mirror life—a clear image—better, swifter work, without tiring eye-strain.

Look for the name KERR on the back, whenever you buy Mouth Mirrors!

DETROIT DENTAL MFG. CO. - DETROIT

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Let Us Do The Worrying About Your Tour

Whether you plan for Europe, the Orient, Latin America and any one of the beautiful and interesting tours in the United States, we can help you plan your itinerary, make complete arrangements for hotel and traveling accommodations, and take care of all the details so that you will have perfect enjoyment and relaxation.

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Chicago Travel Headquarters

132 W. Monroe Street

Chicago, Illinois

Conclusions

1. "Residual infection of the jaws is of greater importance than has hitherto been given to it. More experience is required before we can decide on the ideal method of treatment."

2. Roentgenograms are advisable when it was believed that the teeth were septic foci and removed without improvement in the patient's general health. If necessary a bacteriologic examination should be made to exclude residual infection and to give assurance that the focus of infection must be elsewhere.

3. Persistent shrinkage below a denture may indicate residual infection.

4. Postextraction complications resulting from the high percentage of roots left in the jaws may be so severe that in the interest of both patient and dentist routine postoperative roentgenographic examinations should be made.

Report of a Survey of Public Use and Appreciation of Dental Services¹

THE ACADEMY OF DENTISTRY of Toronto² sponsored and directed a survey to obtain the public appraisal of dentistry with a view to determining the type of educational material needed. The questionnaire method was employed; 2300 forms were distributed as follows: 1000 to strictly rural and farm homes throughout southern Ontario; 1500 to six small representative urban centers; 800 forms in Toronto according to the various income brackets.

Questionnaire

- "1. (a) Do you consult a dentist regularly? At what intervals?
- (b) Do you consult a dentist only when you have specific dental trouble?
- (c) How often do you brush your teeth?
- (d) Are you getting all the dental treatment you need? (Yes or No)
- "2. Do you consider proper dental care essential to general good health? (Yes or No)

¹Report of a Survey of Public Use and Appreciation of Dental Services, J. Canadian Dental Assn. 3:462 (September) 1937.

²With the cooperation of the Royal College of Dental Surgeons of Ontario and the Ontario Dental Association, and conducted by the Research Department of the J. J. Gibbons Company, Toronto, during March and April, 1937.



When properly compounded for daily use in ordinary cases, a dentifrice possesses the following characteristics:

1. It does not contain ingredients or substances which are harmful to the teeth or mucous membranes of the oral cavity, or to the stomach if swallowed.
2. It does not perceptibly alter the normal salivary reaction or secretion.
3. It does not lessen nor destroy the action of the salivary ferments.
4. It is not highly medicated. It is intended mainly to assist in the cleansing operation.
5. It does not contain fermentable substances, gritty abrasives, caustics, astringents, acids, or tartar solvents.
6. It should be capable of neutralizing bacterial acids arising from fermentation and other processes in the mouth, without injury to the soft tissues.
7. It should not stain the teeth.
8. It should be of pleasant taste and odor.

Squibb Dental Cream and Squibb Tooth Powder, the acid-neutralizing dentifrices, ensure the highest degree of effectiveness and safety possible, because they possess all the above desirable characteristics of a dentifrice for daily use.

We shall be pleased to send you a complimentary package of Squibb Dental Cream and Squibb Tooth Powder for your personal use. Use the coupon below.

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MANUFACTURING CHEMISTS TO THE MEDICAL AND DENTAL PROFESSIONS SINCE 1858

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Attached hereto is my professional card or letterhead. Please send me a complimentary package of Squibb Dental Cream and Squibb Tooth Powder.

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NEW!

The McKesson EASOR

is now available



Completely patient controlled
Greater operating efficiency
Improved safety
Extremely moderate in price

The Easor is the result of two years research and experimentation. Its design embodies features entirely new to analgesia apparatus. Its construction typifies the fine precision and dependability of McKesson craftsmanship.

Its flexibility is such that it can be used with *Nitrous Oxid*, and *Air*, or with *Nitrous Oxid*, *Air* and *Oxygen*. For either of these technics, controls are positive, assuring a non-varying, predetermined dosage.

Nitrous Oxid analgesia is recognized safe procedure. The Easor embodies features such as the Emergency Oxygen Button, Safety Valve on dosage control, unique Air Port in nasal hood, which doubly insure this safety.

Return the coupon and get the complete story of the Easor. You will be pleasantly surprised to learn the small investment required to install an Easor in your office.

McKesson Appliance Company
Toledo, Ohio

Send me complete information on the new Easor.

Dr.
Address
City State
(Or please use coupon on page 508)

"3. Designate IN ORDER OF IMPORTANCE (1, 2, 3, etc.), the following reasons why you desire dental treatment:

- (a) To protect your general health, having in mind that diseased teeth often cause ill health.
- (b) To enable you to chew your food properly.
- (c) For the sake of appearance.
- (d) To prevent possible toothache.
- (f) For any other reason—please specify.

"4. If you are not getting all the dental treatment you need, is it because:

- (a) You put off going to the dentist?
- (b) Dental treatment is disagreeable to you?
- (c) You cannot find sufficient time?
- (d) Necessary treatment may cost you more than you can afford?
- (e) You cannot afford any dental treatment?
- (f) Any other reason?

"5. Have you any children under your care? (Yes or No) Number.....

- (a) Do you consider the care of their *first* teeth important?
- (b) At what age did you begin your children's visits to a dentist?
- (c) For which of the following reasons do your children visit a dentist:
 - (1) When you discover a cavity?
 - (2) For care of their teeth at regular intervals?
 - (3) For relief of pain only?
- (d) Do you know that permanent molars come in back of the first set at about the sixth year?
- (e) Are your children getting all the dental treatment you think they need? If not, why not? (Please specify)"

It will be recalled by readers of this magazine that a comparable questionnaire was conducted by Oral Hygiene Publications and the results published in THE DENTAL DIGEST from January through May of this year. Our study was among 1200 dental patients in thirty-seven representative practices throughout the country. The questions asked are repeated



Assurance- in Tubes

At best it is no easy task to construct a denture that will satisfy an exacting patient. What are the tests of such a denture? Aren't these the most important?

1 It should fit so perfectly that it will positively stay in place in all ordinary conditions;

2 It should give the patient no lasting discomfort at any point;

3 It should do its work effectively;

4 It should minimize, in all respects, the strain of changing from natural to artificial teeth.

A denture that meets these tests quickly establishes confidence in the dentist's skill, and tends to rapid building of practice.

How can assurance of such results be obtained? The answer, of course, is a long story with many elements. But much of this assurance can be bought in a package—in two tubes—of Dr. Kelly's Impression Paste. If you use "Kelly's Paste" you know this... if not, why not give it a real trial, with our unconditional guarantee of your satisfaction? Kelly-Burroughs Laboratory, Inc., 143 N. Wabash Ave., Chicago, Ill.

Two forms... powder-and-liquid or ready-mixed in tubes, \$2.50 (only a few cents an impression)

KELLY'S PASTE



"Will it taste good, Doctor?"

Old hats are fun, but new, pleasant tasting medication is important for young patients. When you wish to cause prompt alkalinization, prescribe . . .

BiSoDoL Mints

They may be chewed, or swallowed whole with water.

BiSoDoL Mints or BiSoDoL Powder are useful for neutralizing acidity and maintaining alkali balance.

Free Samples on Request.



The BiSoDoL CO., New Haven, Conn.

(Please use coupon on page 509)



The specially treated rubber of the dropper-closure on bottles of Ames Liquid repels the liquid and constitutes a great aid to cleanliness.

THE CEMENT OF ORTHODONTISTS

The preference of orthodontists generally for Ames Dental Cements is a fact of urgent significance to the profession.

In no field of practice is a dental cement subjected to more severe requirements than in orthodontia. The overwhelming popularity of Ames Cement among orthodontists justifies the belief that only Ames Cement provides all the clinical characteristics which the orthodontist must have to obtain satisfactory results in his difficult science.

"Specification Cement" At Its Very Best

Z. M. Crown and Bridge Cement—made by Ames—not only meets A.D.A. Specifications on every point, but is compounded in such a way as to provide those physical characteristics in their most efficient and satisfactory form. The price of Z.M. Cement is attractively low. If you prefer a "Specification Cement" ask your dealer for Z.M.—made by Ames.

AMES THE W. V-B. AMES COMPANY
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DENTAL CEMENTS

You Need Finalustre...

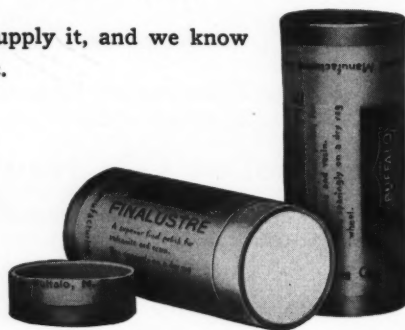
You need FINALUSTRE for putting a fresh finish on removable work before replacing it after a sitting.

You need FINALUSTRE for touching up your vulcanite or resin work after slight alterations.

You need FINALUSTRE for final polishing of all kinds on metals, vulcanite, or resin. It is a new, economical material used on a dry rag wheel . . . already well established in territories where it has been tried.

Your dental dealer can supply it, and we know you'll like it! Package, 75c.

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DENTAL
MFG. CO.
BUFFALO, N. Y.**



here for convenience in comparison of the results of the two surveys:

"1. What do you think causes a toothache?

"2. Of what use is an x-ray of the teeth?

"3. What do you think causes tooth decay?

"4. Would you like an injection of a local anesthetic while having a tooth drilled?

"5. What is your understanding about pyorrhea; in other words, what do you think it is?

"6. How long do you expect dental work that has been done (fillings, bridges, for instance) to last?

"7. What relation do the teeth have to general health?

"8. Do you think of an extraction of a tooth in the same way as you do of an operation?

"9. What do you expect a toothpaste or a toothpowder to do for you?

"10. Do you think it is necessary to fill cavities in the "first" ("baby" or "temporary") teeth?

11. Are crooked teeth and poorly developed jaws in children something that they "outgrow"? What are your opinions?

"12. What do you think brings about the need for artificial teeth? Do you think it is "just one of those things" that comes with advanced age?"

Significant Conclusions Drawn in the Canadian Study

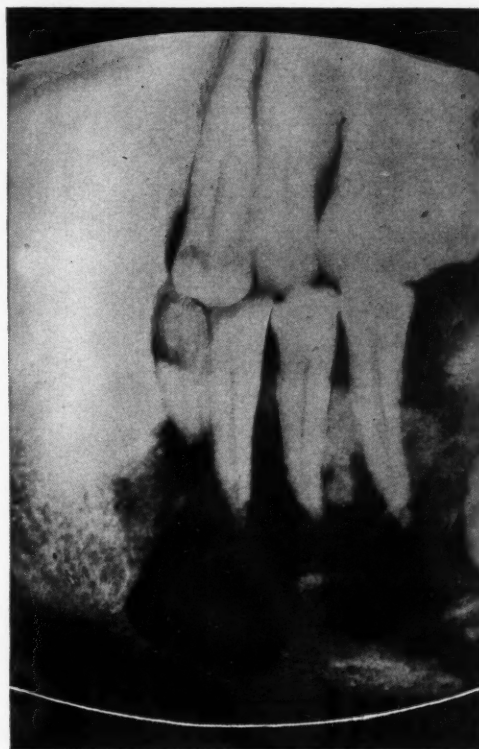
1. "Fear of probable cost" and "inability to spare any money at all for dental service" far outweigh all other reasons why the persons responding were not receiving necessary dental treatment." This is especially the case in the rural areas, and in the class of homes where orthodontia and bridge-work were considered.

2. Regular dental visits are not likely from persons who live in the country or are poor.

3. Many who received adequate dentistry nevertheless complained of the high cost. In interpreting this factor, the Canadian investigators point out: "There will always be some who neglect their teeth and of course neglect is costly." This was likewise pointed out in the DIGEST study: "Neglect costs more than treatment: in time, in pain, and in money."

4. From 89 per cent to 100 per cent of the various groups responding to the Toronto questionnaire considered the care of the deciduous teeth im-

Absorption from *Osteomyelitis*



BREAKS DOWN BODY RESISTANCE

Acute or chronic suppurative inflammation of the bone marrow, following injury, fracture or tooth extraction, frequently results in systemic weakness due to absorption of toxic material.

Sal Hepatica helps to prevent the accumulation of infectious material from these cases of osteomyelitis by acting to gently remove harmful waste from the intestinal tract.

Sal Hepatica tends to increase body resistance by its aid in the maintenance of alkaline balance. Sal Hepatica also stimulates an increased rate of bile flow from the liver into the gall bladder and thence, into the duodenum.

Sal Hepatica

FLUSHES THE INTESTINAL TRACT AND AIDS NATURE TO COMBAT ACIDITY

The action of Sal Hepatica can be compared to that of famous natural spring waters. It makes a pleasing, effervescent drink . . .
Samples and literature promptly forwarded at your request.

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OLD ETCHING: Barber surgeon extracting tooth by candle-light. At the rear may be seen barber and surgical instruments, including brush, shears, and mirror.

... Fear of Dental Pain

and the actual discomfort of instrumentation are frequently allayed by the pre-operative administration of

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IDEAL FOR THE GENERAL PRACTITIONER AND THE MAN WHO SPECIALIZES

Dental Oral Surgery really offers a postgraduate course in textbook form. It describes in complete detail the invaluable technique of the author, Doctor Wilton W. Cogswell. This is a book for the progressive man; it is ideal for both the general practitioner and the man who specializes. The price is \$10. Order your copy at once.

THE DENTAL DIGEST

1005 Liberty Ave.

Pittsburgh, Pa.

portant. This reaction was likewise observed in our study.

5. Those persons who see their dentists with greatest regularity show the most understanding of the importance of dentistry and have the most knowledge on all dental subjects. Again, the superior value of education in the dental office is factually emphasized, and the conclusion drawn in our survey, **WHAT TWELVE HUNDRED PATIENTS KNOW ABOUT DENTISTRY** bears repetition: The place to educate patients is in the dental office. Patients want to be informed and prefer the information given by their dentists to that disseminated through paid advertising.

Cost as a deterrent to receiving adequate dentistry did not figure so prominently in our survey, probably because those responding were patients rather than potential patients. The type of questions asked may also have influenced the replies in this regard. For the same reason, fear of pain was expressed more frequently in the patient survey, which included a question about anesthesia, than in the Canadian study.

TO THE Editor

American Society for the Advancement of General Anesthesia in Dentistry, Belmont Plaza Hotel, New York City, Monday, October 25, at 8:30 P. M. Dinner at 7 P. M.

Ohio State Dental Society, seventy-second annual meeting, Mezzanine Floor of the Neil House, Columbus, November 8-10.

Greater New York Dental Meeting, thirteenth annual meeting, Hotel Pennsylvania, New York City, December 6-10.

The District of Columbia Dental Society will again act as host to the Five State Post Graduate Clinic, Mayflower Hotel, Washington, D. C., March 6-9, 1938.

American Dental Society of Europe, Stockholm, Sweden, August 1-3, 1938.

WEBER *Presents*

A DISTINGUISHED NEW LINE OF DENTAL CABINETS

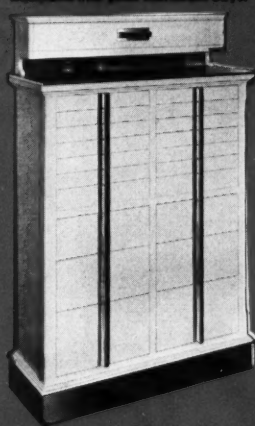
THE popularity of the new Weber Cabinet line is sweeping the country. Dentists everywhere are acclaiming them for their beauty of design, finish and practicability. This spontaneous reception can be accounted for, only, by the many new and interesting features which characterize the Weber cabinet line, particularly the new Models C-37, the Innovation and Model MCD-37.

The new Weber Cabinets are easy to look at . . . easy to buy because they are designed to appeal to the eye and the pocket book of those dentists who know real value when they see it.

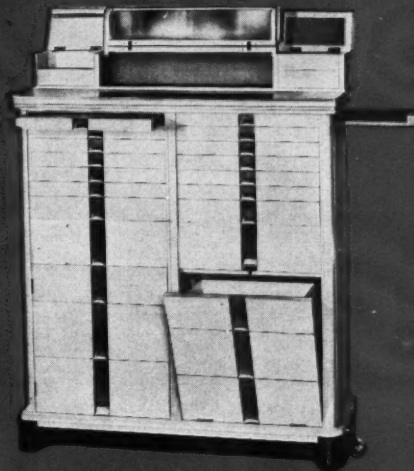
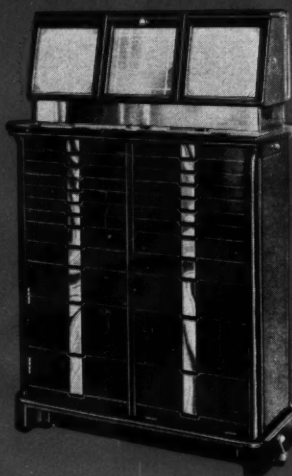
Decide today to look at this new Weber Cabinet line at your Weber dealer or, write for descriptive literature.

Rich
IN BEAUTY
Distinctive
IN DESIGN
Reasonable
IN PRICE

(Below) The New Weber Model C-37 Cabinet (all wood construction) is a companion to the popular Model "C," the only difference being in the top which are interchangeable. The bottle rack top on the C-37 is recessed to hold sixteen one ounce, ground shaper medicine bottles. Working surface and base are of Formica which is extremely durable and easy to clean. Drawer pulls of Stainless Steel and Brass add to the modern appearance of this cabinet which is popularly priced at \$175.00. All standard dental colors optional. Finished with glass instrument trays.



The Innovation Model shown below is identical in design, construction, size and capacity to the Model MCD-37 shown at the right. The only difference is in the base which are interchangeable. The top in the Innovation incorporating two built-in X-Ray diagnostic view boxes for films up to 8" x 10" in size. Has a Rheostat for graduating the degree of light for reading various films. Also has a spacious and lined storage compartment for X-Ray film.



(Above) The New Weber Cabinet, Model MCD-37 provides ample working area, space for hypodermic syringes and needles in the left compartment, sixteen one ounce medicine bottles in the center and X-Ray film in the right hand compartment. Usually equipped with glass trays. All standard dental colors.

HERE ARE THE DISTINCTIVE FEATURES OF THE NEW INNOVATION CABINETS.

1. Film, convenient design. Modern appearance.
2. Spacious, lined lead storage compartment for X-Ray film.
3. Foot operated soiled linen hamper.
4. Storage compartment for towels, dressings, etc.
5. Extendable writing surface.
6. Auxiliary (Formica Surfacel) slab for mixing cements, etc.
7. One medicine compartment. Glass insert shelves for nineteen bottles.

(Left) Weber Auxiliary Cabinet, Model WH-137. All wood construction. Nine drawers—wood trays. Opal glass instrument trays available at slight extra cost. Formica working surface and base. Sanitary drawer pulls. \$80.00 in any standard dental finish. Height, 37 1/2" — Width, 18" — Depth, 13".



(Right) Wall Type Auxiliary Cabinet, Model WH-37. All wood construction. Ten drawers with wood trays. Glass enclosed top holds sixteen medicine bottles. Price, in any standard dental finish, \$80.00. (bottles extra).



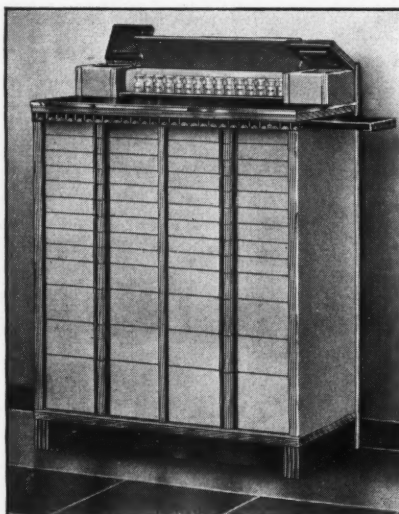
THE WEBER DENTAL MFG. CO.
CANTON, OHIO
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149 BROADWAY, NEW YORK CITY



FINGERTIP CONVENIENCE

is a mighty important point to every busy dentist. And it is an all-important point in the design of the American Cabinet No. 141 shown here. From the handily located disappearing bottle rack to the perfectly detailed arrangement of the interchangeable trays, every practical feature of this strikingly beautiful cabinet has been placed for "finger-tip convenience." Here are a few of the many features

you will appreciate. Disappearing Automatic Bottle Rack, Unbreakable Black Formica Top, Smooth Operating Steel Drawers, Dust Covers on Instrument Drawers, Pull-Out Mixing Slide on Right End, Aulflex Finish with Chrome Trim, Acid Resistant Drawer Interiors.



The American Cabinet No. 141 shown here, only 15" deep, is especially designed for those dentists whose office space is limited. Send in the coupon below for further information on this and other American Dental Cabinets.

American DENTAL CABINETS

American Cabinet Co.
Two Rivers, Wis. Dept. DD-10-37

Please send catalog and prices on American Cabinets with "fingertip convenience."

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State Board Examinations

Ohio State Dental Board, next examination, College of Dentistry, Ohio State University, Columbus, the week beginning October 25. All applications must be in the hands of the Secretary at least ten days before date of examination. For information, write to Morton H. Jones, D.D.S., 1553½ North 4th Street, Columbus, Ohio.

Connecticut Dental Commission will meet in Hartford, November 30, December 1, 2, 3, and 4, 1937, for the examination of applicants for license to practice dentistry and dental hygiene. Applications should be in the hands of the Recorder at least ten days before the meeting. For information, write to Almond J. Cutting, D.D.S., Recorder, Southington, Connecticut.

The National Board of Dental Examiners will hold a session for the examination of candidates in Parts I and II on December 6 and 7 in such cities as five or more candidates request. For information, write to Morton J. Loeb, D.D.S., 66 Trumbull Street, New Haven, Connecticut.

State Board of Dental Examiners, next examination, San Francisco, commencing on December 6 at Physicians and Surgeons College of Dentistry, 344 Fourteenth Street. All credentials must be in the office of the Secretary, Doctor Kenneth I. Nesbitt, 450 McAllister Street, San Francisco, at least 20 days prior to date of examination.

The State Board of Registration and Examination in Dentistry of New Jersey will hold its annual examinations, commencing Monday, December 6, and continuing for five days thereafter. Upon application to the Secretary, Doctor Walter A. Wilson, 148 West State Street, Trenton, a copy of the Requirements and Rules, Instruction Sheet, and Preliminary Application blank will be sent. Applicants must file the Preliminary Application, together with the examination fee of \$25.00, on or before September 1. For June examination applicants must file the Preliminary Application, together with the examination fee of \$25.00, on or before March 15.